A SUGGESTION TO MAYA SCHOLARS[1]

By ZELIA NUTTALL

Some years ago, on making a comparison between the Mexican and Maya systems of numeration, I learned from the celebrated Friar Beltran de la Rosa's work on the Maya language, first printed in 1746, that, like the Mexicans, the Mayas employed a number of affixes which, when added to their numerals, furnished an indication as to the *kind* of object that was enumerated. Just as the Mexicans, for instance, add the affix *tetl* to each numeral when they are counting chickens, eggs, cocoa, tamales, loaves of bread, melons, etc., so the Mayas affixed the syllable *te* when they counted not only eggs, cocoa, and calabashes, but also years, months, and days.

Now, while Molina, in his *Diccionario de la lengua Castellana y Mexicana*, records the uses of only six affixes or methods of counting besides what he terms the "general count" (in which the numerals were employed without affixes), the Maya dictionary records the use of not fewer than seventy-five affixes, of which I shall cite the following examples:

The affix *ac* was employed in counting canoes, boats, houses, lots, churches, seats, altars, canes, pits, troughs, villages, and fields. The affix *mol* was used in counting things which are united, gathered, or congregated together. When birds, fishes, and animals were counted the affix *poḳ* was employed. On the other hand, *tul* was added in counting men and women. The affix *pec* denoted that the things counted were flat and round, like tortillas, maize-cakes, etc. *Baḳ* was used for counts of four hundred. The affix *oc* signified objects which were measured by handfuls; *ual* for leaves of tobacco, plantain trees, etc.; *piz* for pieces of money, also years and days; *muc̄h* for heaps of stones, earth, grain, etc.; *hat*, for pairs of things; *ahau* for twenty-day periods; *auat* for distances; *cuc* for measures; *cuch* for loads; *c̄huy* for bags, bunches of fruit, strings

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of beads, in fact for all things which could be carried hanging from the hand.

These few examples will suffice for the present to demonstrate the Maya system of affixes, with which I was long acquainted before I began to wonder how the Mayas could have expressed or recorded them in connection with numerals in their hieroglyphic writing. That they must have done so seems apparent; and as a cursive method of expressing what objects were being counted, the affixes must have been most useful. Indeed, Friar Beltran de la Rosa points out the advantages of the system. He says: "The affixes united to the numerals ranging from *hun*, which is one, to any high number, enable one to distinguish the things that are being enumerated. For instance, *huntul* denotes one man; *hun-pok* an animal or bird; *hun-cuch*, one load, etc. Therefore, when a person says *hunpok* you know that it signifies quadrupeds, or winged animals, or other irrational creatures, although the affix *pel* is the generic for all things, that is to say, the 'general count.'"

Returning to the question as to the probable method by which the Mayas would have recorded these indispensable numerical affixes, it has seemed most probable that, like the Mexicans, they would have chosen some object, easily painted or carved, the sound of the name of which exactly or closely resembled that of the affixes. During a hasty search in a Maya dictionary for names of natural objects which in sound are similar to some of the affixes, I found the following:

The affix *ac* is like *ak*, the Maya name for turtle and tongue; therefore a turtle or a tongue depicted next to a numeral could serve to indicate that a number of houses, villages, fields, etc., were being recorded. The term *bak*, a bone or a rock, is identical with the affix *bak*, hence a representation of a bone or a rock in conjunction with a number might denote that counts of four hundred were being recorded. The name for a bag or satchel, *mucuc*, could be used to record the affix *muc*, which denotes that "numbers of times" are being counted, or the double, and that one has to pay "twice as much," "three times as much," etc.[1]

[1] On page lxx of the Dresden Codex are four separate representations of what resemble conventional figures of bags tied with a cord which is knotted above them.

A claw, *mol*, painted next to a numeral could express the affix *mol*, which signifies a congregation of things; and representations of a toad, *much;* a dog, *pec;* a quail, *num;* a foot or leg, *oc;* a seat, *dzam;* a bag or satchel, *mucuc*, could have recorded, in the same way, the exact sound of the affixes *much*, *pec*, *num*, *oc*, *dzam*, and *muc*.

It will doubtless occur to students of Maya hieroglyphics that amongst the latter are found numerals accompanied with representations of some of the natural objects enumerated. Moreover, amongst the familiar day-signs of the Maya calendar we find *ahau* and *oc*, both of which words figure in Beltran de la Rosa's list of affixes, the first denoting that twenty-day counts are being enumerated, the second that "handfuls" are being counted. A recognition of this important fact will necessitate a revision of such calculations and conclusions as have been made in the belief that numerals attached to the sign *ahau* designated a day-number only.

Without drawing hasty conclusions, and yet not placing undue value on the results I have obtained and here present, I desire to point out that systematic research along this new line promises to lead to interesting and possibly to valuable and unforeseen results. I would also draw attention to the fact that, although Maya scholars have bestowed much study upon the numerals contained in Maya inscriptions, no one, to my knowledge, has yet devoted attention to or even taken into consideration the existence of the seventy-five affixes above referred to, although they were and are habitually used, in connection with numerals, by the Maya people. The fact that these affixes should have been hitherto ignored or overlooked is as inexplicable as the groundless assumption, by Maya specialists, that all numerals recorded in the Maya codices are in the "general count." It must be admitted that no study of the Maya numeral system can be regarded as absolutely satisfactory and complete until these seventy-five affixes are studied in connection with

Three of these contain the numeral *six*, the remaining one the number *eight*. If it be assumed that the bag, *mucuc*, expressed the affix *muc* and the numerals recorded certain "numbers of times," the interpretation in three cases would be "six times as much" and in one case "eight times as much." It is obvious that such a possibility should be carefully weighed and investigated by those who are studying the numerals in the Maya codices.

recorded numbers, and I am therefore led to express the hope that in future they will receive the attention they unquestionably deserve.

In order to place these affixes within the reach of all students, I append a translation of Beltran de la Rosa's chapter XI, "On Maya Numerals," from his *Arte del Idioma Maya*, published in Mexico in 1746 and reprinted in Merida in 1859:

ON THE NUMERAL, ITS TABLES AND PARTICLES

1, Hun.
2, Ca.
3, Ox.
4, Can.
5, Ho.
6, Uac.
7, Uuc.
8, Uaxac.
9, Bolon.
10, Lahun.
11, Buluc.
12, Lahcá.
13, Oxlahun.
14, Canlahun.
15, Holhun.
16, Uuaclahun.
17, Uuclahun.
18, Uaxaclahun.
19, Bolonlahun.
20, Hunkal.
21, Huntukal.
22, Catukal.
23, Oxtukal.
24, Cantukal.
25, Hotukal.
26, Uactukal.
27, Uuctukal.
28, Uaxactukal.
29, Bolontukal.
30, Lahucakal.
31, Buluctukal.
32, Lahcatukal.
33, Oxlahutukal.
34, Canlahutukal.
35, Holhucakal.
36, Uaclahuntukal.
37, Uuclahutukal.
38, Uaxaclahutukal.
39, Bolonlahutukal.
40, Cakal.
41, Huntuyoxkal.
42, Catuyoxkal.
43, Oxtuyoxkal.
44, Cantuyoxkal.
45, Hotuyoxkal.
46, Uactuyoxkal.
47, Uuctuyoxkal.
48, Uaxactuyoxkal.
49, Bolontuyoxkal.
50, Lahuyoxkal.
51, Buluctuyoxkal.
52, Lahcatuyoxkal.
53, Oxlahutuyoxkal.
54, Canlahutuyoxkal.
55, Holhuyoxkal.
56, Uaclahutuyoxkal.
57, Uuclahutuyoxkal.
58, Uaxaclahutuyoxkal.
59, Bolonlahutuyoxkal.
60, Oxkal.
61, Huntucankal.
62, Catucankal.
63, Oxtucankal.
64, Cantucankal.
65, Hotucankal.
66, Uactucankal.
67, Uuctucankal.
68, Uaxactucankal.
69, Bolontucankal.
70. Lahucankal.

71, Buluctucankal.
72, Lahcatucankal.
73, Oxlahutucankal.
74, Canlahutucankal.
75, Holhucankal.
76, Uaclahutucankal.
77, Uuclahutucankal.
78, Uaxaclahutucankal.
79, Bolonlahutucankal.
80, Cankal.
81, Hutuyokal.
82, Catuyokal.
83, Oxtuyokal.
84, Cantuyokal.
85, Hotuyokal.
86, Uactuyokal.
87, Uuctuyokal.
88, Uaxactuyokal.
89, Bolontuyokal.
90, Lahuyokal.
91, Buluctuyokal.
92, Lahcatuyokal.
93, Oxlahutuyokal.
94, Canlahutuyokal.
95, Holhuyokal.
96, Uaclahutuyokal.
97, Uuclahutuyokal.
98, Uaxaclahutuyokal.
99, Bolonlahutuyokal.
100, Hokal.
101, Huntu uackal.
102, Catu uackal.
103, Oxtu uackal.
104, Cantu uackal.
105, Hotu uackal.
106, Uactu uackal.
107, Uuctu uackal.
108, Uaxactu uackal.
109, Bolontu uackal.
110, Lahu uackal.
111, Buluctu uackal.
112, Lahcatu uackal.
113, Oxlahutu uackal.
114, Canlahutu uackal.
115, Holhu uackal.
116, Uaclahutu uackal.
117, Uuclahuntu uackal.
118, Uaxaclahutu uackal.
119, Bolonlahutu uackal.
120, Uackal.
121, Huntu uuckal.
122, Catu uuckal.
123, Oxtu uuckal.
124, Cantu uuckal.
125, Hotu uuckal.
126, Uactu uuckal.
127, Uuctu uuckal.
128, Uaxactu uuckal.
129, Bolontu uuckal.
130, Lahu uuckal.

NOTE: From this number up to 400 I shall cite only four numbers of each group of ten, as it is easy to count the intermediate numbers by following the system indicated.

131, Baluc tu uuckal.
135, Holhu uuckal.
140, Uuckal.
141, Huntu uaxackal.
145, Hotu uaxackal.
150, Lahu uaxackal.
151, Buluc tu uaxackal.
155, Holhu uaxackal.
160, Uaxackal.
161, Huntu bolonkal.
165, Hotu bolonkal.
170, Lahu bolonkal.
171, Buluc bolonkal.
175, Holhu bolonkal.
180, Bolonkal.
181, Huntu lahunkal.
185, Hotu lahunkal.
190, Lahu tu lahunkal.
191, Buluc tu lahunkal.
195, Holhu tu lahunkal.

200, Lahunkal.
201, Huntu buluckal.
205, Hotu buluckal.
210, Lahu tu buluckal.
211, Buluc tu buluckal.
215, Holhu tu buluckal.
220, Buluckal.
221, Huntu lahcakal.
225, Hotu lahcakal.
230, Lahu tu lahcakal.
231, Buluc tu lahcakal.
235, Holhu tu lahcakal.
240, Lahcakal.
241, Huntu yoxlahunkal.
245, Hotu yoxlahunkal.
250, Lahu tu yoxlahunkal.
251, Buluc tu yoxlahunkal.
255, Holhu tu yoxlahunkal.
260, Oxlahukal.
261, Huntu canlahukal.
265, Hotu canlahukal.
270, Lahu tu canlahukal.
271, Buluc tu canlahukal.
275, Holhu tu canlahukal.
280, Canlahunkal.
281, Huntu holhukal.
285, Hotu holhunkal.
290, Lahu tu holhukal.
291, Buluc tu holhukal.
295, Holhu tu holhukal.
300, Holhukal.
301, Huntu uaclahukal.
305, Hotu uaclahukal.
310, Lahu tu uaclahukal.
311, Buluc tu uaclahukal.
315, Holhu tu uaclahukal.
320, Uaclahukal.
321, Huntu uuclahukal.
325, Hotu uuclahukal.
330, Lahu tu uuclahukal.
331, Buluc tu uuclahukal.
335, Holhu tu uuclahukal.
340, Uuclahukal.
341, Huntu uaxaclahukal.
345, Hotu uaxaclahukal.
350, Lahu tu uaxaclahukal.
351, Buluc tu uaxaclahukal.
355, Holhu tu uaxaclahukal.
360, Uaxaclahukal.
361, Huntu bolonlahukal.
365, Hotu bolonlahukal.
370, Lahu bolonlahukal.
371, Buluc tu bolonlahukal.
375, Holhu tu bolonlahukal.
380, Bolonlahukal.
381, Huntu hunbak.
385, Hotu hunbak.
390, Lahu hunbak.
391, Buluc tu hunbak.
395, Holhu tu hunbak.
400, Hunbak.
500, Hotubak.
600, Lahutubak.
700, Holhutubak.
800, Cabak.
900, Hotu yoxbak.
1000, Labuyoxbak, vel hunpic.
2000, Capic.

I note here that having counted up to 400, or a *hunbak*, the Indians continued to count by groups of 400, saying *hunbak*, *cabak*, *oxbak*, etc., or one 400, two 400, three 400, etc., just as we say one thousand, two thousand, etc. But if a minor number be added to the 400 it is counted according to the method given above, the minor number, however, being preceded by the separate particle *catac*, which means "and." Thus, the number 450 is expressed by *hunbak catac lahuyoxhal*, and so on.

I also note that, although the Indians originally used the word *pic* to signify 8000, it has become usual to employ *pic* to signify 1000. Therefore, in

order to avoid confusion, I will employ *pic* for 1000, and in order to designate the present century (or year), which is 1743, I will say *hunpic holhutubak, catac oxtuyoxkal*, placing *catac* before the last number.

Multiplication Table

2 x 2 = 4 Calem ca = Can.
2 x 3 = 6 Calem ox = Uac.
2 x 4 = 8 Calem cam = Uaxac.
2 x 5 = 10 Calem hó = Lahun.
2 x 6 = 12 Calem uac = Lahca.
2 x 7 = 14 Calem uuc = Canlahun.
2 x 8 = 16 Calem uaxac = Uaclahun.
2 x 9 = 18 Calem bolom = Uaxaclahun.
2 x 10 = 20 Calem lahun = Hunkal.

3 x 3 = 9 Oxlem ox = Bolon.
3 x 4 = 12 Oxlem cam = Lahca.
3 x 5 = 15 Oxlem hó = Holhun.
3 x 6 = 18 Oxlem uac = Uaxaclahun.
3 x 7 = 21 Oxlem uuc = Huntukal.
3 x 8 = 24 Oxlem uaxac = Cantukal.
3 x 9 = 27 Oxlem bolón = Uuctukal.
3 x 10 = 30 Oxlem lahun = Lahucakal.

4 x 4 = 16 Calem can = Uaclahun.
4 x 5 = 20 Calem hó = Hunkal.
4 x 6 = 24 Calem uac = Cantukal.
4 x 7 = 28 Calem uuc = Uaxactukal.
4 x 8 = 32 Calem uaxac = Lahcatukal.
4 x 9 = 36 Calem bolón = Uaclahutukal.
4 x 10 = 40 Calem lahun = Cakal.

5 x 5 = 25 Holem hó = Hotukal.
5 x 6 = 30 Holem uac = Lahucakal.
5 x 7 = 35 Holem uuc = Holhucakal.
5 x 8 = 40 Holem uaxac = Cakal.
5 x 9 = 45 Holem bolón = Hotuyoxkal.
5 x 10 = 50 Holem lahun = Lahuyoxkal.

6 x 6 = 36 Uaclem uac = Uaclahutukal.
6 x 7 = 42 Uaclem uuc = Catuyoxkal.
6 x 8 = 48 Uaclem uaxac = Vaxactuyoxkal.
6 x 9 = 54 Uaclem bolón = Canlahutuyoxkal.
6 x 10 = 60 Uaclem lahun = Oxkal.

7 x 7 = 49 Uuclem uuc = Bolontuyoxkal.
7 x 8 = 56 Uuclem uaxac = Uaclahutuyoxkal.

7 x 9 = 63 Uuclem bolón = Oxtucankal.
7 x 10 = 70 Uuclem lahun = Lahucankal.

8 x 8 = 64 Uaxaclem uaxac = Catucankal.
8 x 9 = 72 Uaxaclem bolón = Lahcatucankal.
8 x 10 = 80 Uaxaclem lahun = Cankal.

9 x 9 = 81 Bolonlem bolón = Huntuyokal.
9 x 10 = 90 Bolonlem lahun = Lahuyokal.

10 x 10 = 100 Lahulem lahun = Hokal.
10 x 100 = 1000 Lahulem hokal = Hunpic.
10 x 1000 = 10000 Lahulem hunpic = Lahupic.
10 x 10000 = 100000 Lahulem lahupic = Hokalpic.
10 x 100000 = 1000000 Lahulem hokalpic = Hunkinchil.

Xocol, bukxoc, bakxoc. } Count, generally speaking.

Bukxoc, bakxoc. } To sum up or record a count or sum.

Yaabcunahkoc, Dzaackoc. } To multiply.

Kinchil, huntzotzceh. } One million or one count, which is the same.

Hun calab. One hundred and sixty thousand.
Hun alau. Sixty-four counts.

Uac calab, catac cakalpic. } One count or million, which is the same.

Hunkinchil, ca kinchil, ox kinchil, etc. } One count, two counts, three counts, etc.

Numerical Affixes

When joined to the above numerals ranging from one (*hun*) to one thousand (*pic*), or indeed to any cipher, the following affixes enable one to distinguish what objects are being counted. For instance, *huntul* is "one man," *hunpok* is "one animal or bird," *huncuch* is "one load," etc. According to this method, when the form *hunpok* was used, one knew that one was speaking of quadrupeds, birds, or other irrational creatures. At the same time the particle *pel* is generic and comprises all things.

Ac. For counts of canoes, boats, houses, lots, seats, earthen vessels, churches, altars, caves, holes or pits, troughs, villages, or maize fields.

Ahau. For counts of the twenty-year groups of the Maya calendar, which are like our indictions, although they consist of a larger number of years than these. The native century or era contained 13 *ahaues*, or 260 years.

Auat. For counts of distances: miles or quarters of leagues.

Bak. For counts of 400; because just as we count by thousands, the Indians counted by 400, saying *hunbak*, *cabak*, etc.

Bal. For counts of ends of ropes,[1] of thread, etc.

Balach. For counts of strokes, of measurements made by rule line or compass; for instance, to the question *Hay balach à pizic á dzib?* "How many strokes didst thou make in thy painting or into how many lines didst thou divide it? The answer would be: *hunbalach*, *cabalach*, etc. "With one," "with two," etc.

Balak. For counts of the turns given to cords laid in circles, or to similar things which are twisted or twined. (Compare *Codz.*)

Ban. For counts of things in heaps. The same as *banab*, which also serves for counting small flocks or herds of animals.

Cot. For counts of quadrupeds.

Cotz. For lengths of threads, cords, rods or staffs; for "pieces" or time:[2] for instance, *hun cotz kan*, "a piece of cord."

Codz. For rolls or circular twists; for instance, *hun codzak*, "a roll of cord" (made of native vines). (Compare *Balak.*)

Cuc. For elbow measurements.

Cuch. For counts of loads.

Cul. For shrubs, young trees, maize plants, and balls or lumps of dough.

Zap. For counts of arm's lengths; each contains two yards.

Chach. For handfuls of herbs or hair.

Chiic. For incised wounds made by arrows, lances, knives, sticks, etc., which are thrown and remain sticking in the flesh.

Chot. For counts of skeins of thread.

Chuy. For bunches of fruit, strings of beads, necklaces, braids, bags, and things which are carried hanging from the hand.

Em. For births; for instance, *U can em yalen in naa*, "I am the fourth son borne by my mother."

Hat. For mantles or "*pati*," for "*piernas*" of mantles or *pati*; also for splinters of wood.

Hau. For gourd vessels split into halves, pages of writing, quarters of dead animals, and slices of fruit.

Heb, Hebal, Hebél. For "*piernas*" of mantles or "*pati*"; also for the counting of provinces; for instance, *ma hun heb u cuchcabal bálcah i*, "the world is not a single province." Even without expressing *cuchcabal*, which means province, it is sufficient to say *ma hun heb balcahi.* This affix is also used to designate the parts of the world; for instance, *tu can hebal bal cah*, "in the four quarters of the world."

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[1] The Spanish word *ramales*, employed here, also signifies branches, halters, divisions.—Z. N.

[2] The Spanish word *tiempo*, "time," which appears in the text, may possibly be a misprint, as it is unusual to speak of "pieces of time." Compare *Hech* and *Latħabkin*, used for counts of hours.—Z. N.

Hech. For counting hours and pages of books; for instance, *hun hech kin*, "one hour"; *hun hech dzabilhuun*, "a page of a printed book." Also used in counting strings of bells, as, for instance, *hun hech kitzmoc*, "a string of bells."

Hek. For counts of branches or bunches.

Latħ. For counts of dishes of food.

Latħabkin. For hours: *hun latħabkin*, "one hour."

Lem. For counts of times: *hun lem*, "*once.*" (Compare *Mal* and *Muc.*)

Lot. For counting in pairs, such as *can lot*, "four pairs."

Mal. For counting numbers of times. (Compare *Lem.*)

Muc. For the same count of times and for duplications, such as paying "twice as much," "three times as much," etc.

Mucħ. For small heaps of seeds, stones, earth, or for crowds of animals, birds, and people.

Mal. For counts of things that are united or congregated.

Nac. For things that are close to each other, such as jugs, staffs, or seated men; for instance, *Hay nac dzulob tu xecob?* "How many Spaniards are seated in their chairs?" *Hó nac ob*, "Five are assembled."

Nacat. For recumbent living beings; for instance, *canacat, oxnacat*, etc.

Num. For times, when expressed by ordinal numbers. Example: *ú can numilin cħapahal lae*, "this is the fourth time he fell ill."

Paac. For mantles or "*paties*" of four edges (*i. e.*, square pieces of stuff).

Pach. For counting birds and other animals; employed from number 9 to 19, after which the expression *hun tab*, "twenty," is used.

Pay. For things which are long and not thin, such as beehives, canoes, sea-boats, wooden beams, bales of cloth, and skeins of thread.

Pec. For circular things, such as consecrated wafers, maize-cakes, and others which are flat.

Pet. For maize-fields and for pastures.

Pedz. For chapters of books and for orations and songs.

Piz. For years, days, months, and coin currency (a *real*, or *peso* or dollar).

Picħ. For pieces of a thing cut off and for mouthfuls.

Pok. For fish, birds, and animals.

Pul. For lashes given with a whip or blows dealt with the flat side of the blade of a sword.

Ppeel. For the counting of all things in general.

Ppic. For a written chapter or articles of faith; or for rows of stones, each row or stone being above the other.

Ppiz. For any kind of measure or weight. At the same time this particle usually expresses a *fanega* or measure consisting of twelve *almudes*.[1]

[1] A *fanega* is a dry measure of about an English bushel or about 110 lbs.—Z. N.

Ppoch. For bunches of fruit.

Ppuuc. For plants and trees. The particle *xec* is more popularly used.

Ppuc. For mouthfuls of food or swallows of liquid.

Taz. For things which follow each other in order or in line; also for heavens: *tu yox taz caan*, "in the third heaven," and for regions: *tu yox taz metnal*, "in the third region[1] of hell." This particle is an ordinal number like "first," "second," etc., and when it is joined to another number it ceases to be a numeral and becomes a noun, signifying "said region." Thus, *canpel utaz al metnal* signifies "the regions of hell are four in number."

Tė. For counts of years, months, days, leagues, cocoa, eggs, and calabashes or squashes. Example: *hunté ti haab*, "one year"; *hoté cacao*, "five grains of cocoa."

Ten. For numbers of times, and *tenac* for past times. Example: *Haytenac à zipci?* "How many times didst thou pass?" *Hotenac* = "five times." *Tenel* is also used for times, but with the particle *bahuu*, or *bahunx* or another. Example: *Bahunx ú tenel?* "How many times?" The answer has to designate an indefinite number, such as *yaab ú tenel*, "many times," for it would not be correct to answer *huntenel* unless this numeral were joined to another, as in *canten* or *tenel.*

Tuc. For counts of heaps.

Tul. For counts of men, women, angels, and souls.

Tħil, tzool. For things placed in order or file and for the subdivisions of a house.

Tħal. For lines, furrows, ditches, or trenches, and for pages, printed columns, naves of churches, etc.

Tziil. For the selvage of mantles or cloths and for folds of paper or the leaves of books.

Tzuc. For towns, paragraphs, articles, chapters, notices, heaps or piles, divisions of a whole in various parts.

Dzac. For steps, grades, crowns, or things which are placed one over the other, or for something that succeeds another, such as one governor after another. It is then an ordinal number. Example: *Ú cadzac Halachuinic tali uaye*, "the second governor who came here."

Dzam. For counts of consecrated wafers, pamphlets, shoes, and of all things which are counted in pairs.

Dzic. For counts of persons, this particle being specially dedicated to the persons of the Holy Trinity. It is also employed for counting fingers (for instance, *ú caxic yal in kab*, "the second finger of my hand"), as well as for the husbands or wives that a person has had, for instance: *cadzic chuplil yanacti*, "he has had two wives."

Dzit. For candles; cane pipes; long fruits, such as bananas; also alligator pears, ears of corn, the mamey fruit, etc.

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[1] The Spanish word employed is *seno*, lit. bosom, also depths, etc.—Z. N.

Uudz. For counts of folded cloths and similar things.

Ual. For leaves of tobacco, of banana trees, etc.

Uadz. For counting journeys or the number of times a person goes and comes in performing some business, for instance: *cauas xiu in talzah*, "I have made two journeys carrying grass or herbs."

Uol. For balls of dough, bundles of cotton or of wool, balls of thread and other round things.

Xec. For trees and other plants.

Kaz. For closets, rooms, and subdivisions of a house.

Oc. For things which are measured by handfuls.

Nab. For what is measured by handbreadths.

Chinab. For what is measured by *gemes; i. e.*, the space from the end of the thumb to end of the forefinger extended.

Yal. For sheaths or things that are brought together.